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Performance Oriented Packaging Testing (Fuze, PIBD Packed (400) Per Fiberboard Box) DWGS. 9287859 &9280921

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Michael W. Selk

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FIELD	GROUP	SUB-GROUP	Performance Oriented Packaging, POP, PIBD in fiberboard box.

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This report contains the testing and test results performed on the Fuze, PIBD, packed 400 per fiberboard box.

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91 018

I. Report Number: DOD POP HM TR/AYD 91-018

II. Title: Performance Oriented Packaging Testing for Fuze, PIBD, Less Spitback Packed 400 per fiberboard box in accordance with DWG. 9280921 or 9287859.

Author: Michael W. Selk

Performing Activity: ARDEC

Address: Department of the Army
ARDEC
HQ, U.S. Army Armament, Munitions, and
Chemical Command
Picatinny Arsenal, N.J. 07806-5000
Attn: SMCAR-AEP

Date: 3 September 1991

Approved for public release; distribution is unlimited.

1. Data:

Container:

Type: Box, Fiberboard
UN Code: 4G
Specification Number: PPP-B-636
Material: Fiberboard
Capacity: 67.4 Liters
Dimensions: 51.2cm x 41.0cm x 32.1cm
(20 1/8"x 16 1/8"x 12 5/8")
Gross Weight: 28 kg (62lbs.)

Product:

Name: M549 Grenade Fuze (Less Spitback)
Drawing Number: 9287861
United Nations Number: 0257
United Nations Packaging Group: II
United Nations Nomenclature: FUZES, DETONATING
Physical State: Solid
Amount Per Container: 400 Fuzes, Less Spitback
NSN: 1300-01-125-6824

Container:

Type: Box, Fiberboard
UN Code: 4G
Specification Number: PPP-B-636
Material: Fiberboard
Capacity: 67.5 Liters
Dimensions: 50.8cm x 41.0cm x 32.4cm
(20"x 16 1/8"x 12")
Gross Weight: 26 kg (56lbs.)

Product:

Name: M550 Grenade Fuze (Less Spitback)
Drawing Number: 8886349
United Nations Number: 0257
United Nations Packaging Group: II
United Nations Nomenclature: FUZES, DETONATING
Physical State: Solid
Amount Per Container: 400 Fuzes, Less Spitback
NSN: 1390-01-052-2124

2. Background:

This report contains the testing and test results performed on fuzes packed in a fiberboard box manufactured in accordance with PPP-B-636, Style RSC, Type CF, Class Weather Resistant, Grade V3c. Four-hundred inert M549 Fuzes, Less Spitback were utilized to simulate the proper content weights. The weights of the two packed out boxes were 62 lbs. each. The method of pack was consistent with DWG. 9287859.

NOTE: This POP Report is also submitted for certification of the M550 fuze less spitback packed IAW 9280921. Both packs utilize the same number of fuzes as well as the same internal dunnage but since the M549 fuze is slightly taller than the M550 a correspondingly taller fiberboard box is required. The weight of the M550 pack is 56 lbs.; 6 lbs. less than the M549 pack.

3. Testing:

NOTE: All testing was in accordance with the referenced sections of CFR 49, except that one complete pack was used in lieu of multiple packs for vibration and the entire drop test sequence. The other test sample was used for the stack test.

Vibration Test (178.608):

Procedure-

One container was vibrated on a vibration table unrestrained for a one hour time period. The peak-to-peak displacement was one inch and the frequency was 210 cycles per minute. This frequency was sufficient to allow the pack to become completely airborn enabling a 1/16" piece of strapping material to be passed beneath the pack during testing.

Results-

The outer box received minor abrasions on all faces (except the top) from repetitive impacts with the side walls and base of the vibration table. The container experienced no structural damage and therefore there was no spillage of contents satisfying the passing criteria.

Drop Test (178.603):

Procedure-

The same container used in the vibration test was dropped in the following orientations: flat on bottom, flat on top, flat on long-side, flat on short-side, and the top-right-rear corner. The height for all five drops was 1.2 meters.

Results-

There was no visble damage on the first four drops. On the corner drop, the corner of impact deformed slightly. The contents remained inside the container and the package was capable of being handled without danger of spillage satisfying the passing criteria. It should be noted that this exceeded the requirements of CFR 49 since one container experienced all the drops as opposed to five separate containers experiencing one drop each.

Stack Test (178.606):

Procedure-

A dead load of 560 lbs. was applied to the top of a single packed container for a 24 hour period. This simulates a stack height of 10 feet of identical packages.

Results-

The container uniformly compressed a total of 1/4 of an inch and adequately supported the load, satisfying the passing criteria.

5. Referenced Material:

A. Federal Register, "49 CFR Part 107, 1991"

6. Based on the above equivalent POP Testing, the following POP symbol has been applied to containers IAW Drawings 9287859 & 9280921.

POP Marking for M549 Pack

POP Marking for M550 Pack